Chapter 9

Sampling Operations

Commanders may order the collection of materiel and environmental samples for support of intelligence and operational requirements. These requirements include verification that an attack occurred; identification of agents used; delivery systems; and their nation of origin; or to determine the level of chemical/biological warfare (CBW) technology involved.

Sampling operations particularly are important if a previously unknown agent is used, or if it is the suspected first use of a CB agent by a threat force. Therefore, the collection of CB samples and the background information must be as detailed and comprehensive as possible to provide data for the intelligence analysts.

The processing of CB samples includes the collection, handling, transferring, chain of custody, and administrative procedures. After laboratory analysis of the sample, intelligence personnel analyze the data to support operational needs. The sample process is illustrated in Figure 9-1.

Chemical/biological sampling units (CBSUs) conduct missions throughout the operational continuum during peacetime and wartime operations. NBC recon units and other units trained in sampling techniques conduct overt sampling operations. LB teams assigned to the special operation forces (SOF) conduct covert NBC recon missions. See FM 3-18 for more information pertaining to LB team operations. NBC recon units conduct sampling as part of their normal operations. The collection, reporting, and administrative procedures pertaining to sampling operation are basically the same for all NBC recon units.

Peacetime Competition and Conflict

During peacekeeping operations, security assistance missions, or show of force operations, the first CB sampling (CBS) missions provide a baseline for normal levels of microbes (germs) in a given area. Later, if use is suspected, CBSUs may collect suspected CB samples, which after analysis, would provide technical intelligence data to commanders and their staffs. This information is important during peacetime competition and conflicts to help commanders and their staffs determine what NBC defense measures are needed for force protection, the scope of CB defense assistance to be provided, and the extent of threat capabilities and intentions.

War

CBSUs conduct CB sampling missions to provide technical intelligence that enhances commanders' and staffs' ability to assess the battlefield. Knowing the agent, delivery system, and so forth, helps the commander take

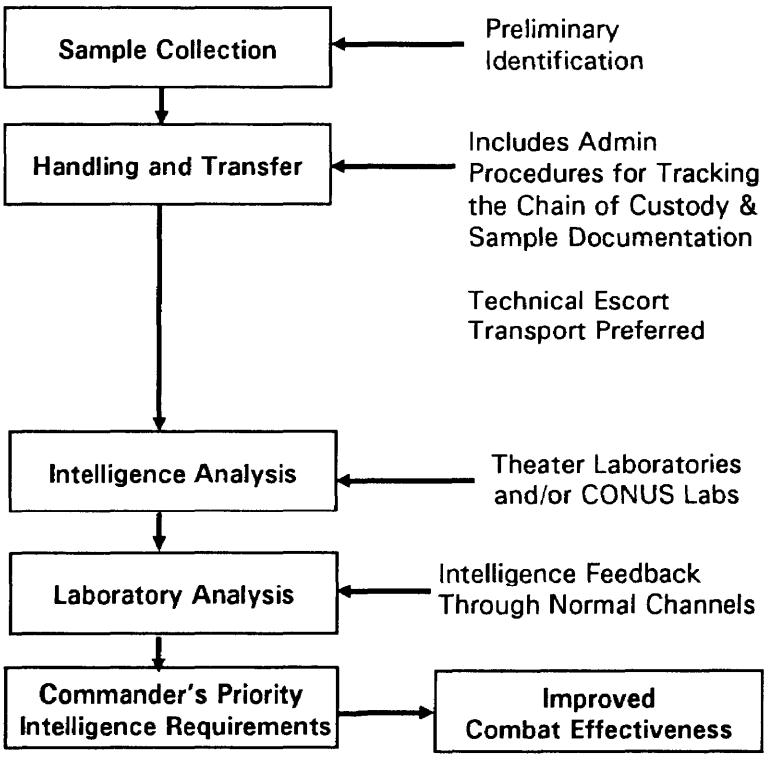

Figure 9-1. The sampling process.

appropriate offensive and defensive actions. Laboratory analysis provides identification of the suspected sample, agent characteristics, toxicity, persistency, hazards to personnel, possible decontamination procedures, and appropriate first aid procedures.

Samples collected by the special operations force during deep operations provide intelligence about threat capabilities, intentions, and the location of threat storage and production facilities.

Employment

The division or corp area uses its organic CB sampling assets within its operations area. The TA commander can direct NBC recon units to conduct CB sampling anywhere in the theater of operations. Planners for strategic or operational level missions also may direct CB sampling operations to support intelligence requirements.

Responsibilities

The NBC recon unit conducts chemical/biological (CB) sampling. Prior coordination, SOPS, OPLANS, intelligence, medical technical assistance, and specific guidance must be followed. NBC recon units are responsible for collection and initial packaging of environmental CB agent samples collected in the field. NBC recon units also are authorized to collect small animals (nonmigratory species only), either dead or dying, as a result of suspected contamination. NBC recon teams ensure uniformity, viability, safety, and accountability in sampling procedures, Trained personnel escort and evacuate the suspected samples to their designated destinations.

Technical intelligence teams also are responsible for collecting biological environmental samples. Medically trained sampling teams are responsible for collecting biomedical samples. NBC recon units are not trained to collect environmental and biomedical samples. NBC recon teams may be augmented by technical intelligence and medical personnel to collect biomedical samples. Appendix B provides detailed guidance on sampling techniques and procedures.

Control

The planning process and the completed analysis of the sample involve detailed coordination and careful execution. The most valuable and reliable intelligence data regarding chemically and biologically contaminated areas are obtained from well planned and coordinated NBC recon. Field commanders task NBC recon units and technical intelligence teams to conduct chemical and biological sampling operations to enhance the IPB process and to specifically identify CB threats.

Personnel who conduct the sampling operations are well trained and have specific equipment designed for sampling operations. Intelligence staffs and NBC recon units plan and coordinate CB sampling operations to ensure units safety and high quality samples. Tasks include command and control, sampling, packaging, processing, transport, analysis, and interpretation of the data.

During peacetime, a chemical biological sampling control center (CBSCC) is established at the Chemical Biological Defense Agency (CBDA) at Aberdeen Proving Grounds, Maryland. The CBSCC determines which laboratory will receive the samples. The CBSCC is composed of appropriate personnel from CBDA and US Army Medical Research Institute for Infectious Diseases (USAMRIID). The following considerations are used by the CBSCC to determine the final destination of the sample:

- Is the sample chemical or biological in content?
- Is the sample content completely unknown?
- Is the sample a possible combination of chemical and biological material?

During peacetime, CB sampling operations may become so numerous that a special staff control element may deploy to the region of concern to centralize the administration and processing of samples. This control element is the chemical biological sampling control element (CBSCE). The CBSCE is a subelement of the CBSCC. The CBSCE is manned by Edgewood Research, Development, and Engineering Center (ERDEC) under the supervision of the technical director of ERDEC. The CBSCE determines the technical processing of CB samples. The CBSCE also tracks the results of sampling operations and keeps records of samples taken.

During war or operations short of war, the J2 is the primary staff responsible for control of CB sampling operations within the theater. The J2 coordinates with the J3, command surgeon, and the theater chemical officer to plan missions for CB sampling assets. The CBSCC can deploy one of its subelements, CBSCE, for use in the theater. Once deployed, the CBSCE is assigned to J2 staff operations. The CBSCE determines the technical processing requirements and procedures for CB samples. The CBSCE also tracks results of sampling operations and keeps records of all samples taken. The command surgeon and the preventive medicine detachment provide additional technical advice to the CBSCE and the technical escort unit designated to transport the samples within the theater.

The CBSCE determines whether to send the sample to the CONUS Chemical and Biological Agent Technical Evaluation Board (CBATEB) for further processing or to keep the sample in the theater and complete the sample analysis in country. The CBSCE uses the following considerations to determine whether or not to send the sample to CONUS:

- Is the sample to be used for verification for first use of toxic agents?
- Is the sample too dangerous to send to CONUS?

- Are the theater laboratories capable of doing the sample analysis?

If sample is kept in theater, it goes to the appropriate laboratory for analysis. However, the mobile mass spectrometer (MMl) on the M93 NBCRS is used initially to analyze chemical samples which are then sent to CONUS for analysis. The MM1 is capable of conducting mobile field laboratory analysis of chemical samples, but not suspected biological samples. All suspected biological samples are analyzed by a designated laboratory.

The chemical staff monitors the mission status of all NBC recon and CBS units. The chemical staff advises the commander on all CBS operations. In addition, the theater chemical officer provides mission guidance for CBS missions IAW the command guidance. Specific missions are given to subordinate chemical units for support of NBC recon operations. Detailed mission orders and plans are prepared by the supporting chemical unit headquarters.

The chemical staff coordinates closely with the tasked unit to provide needed information (such as, intelligence information, target descriptions).

Units

There are three type of units primarily designated to collect CB samples. Environmental samples are normally collected by—

- NBC recon units.
- Technical intelligence teams.
- Preventive medicine units (portable water sources only).

Biomedical samples taken from affected individuals or bodies normally are collected by—

- Battalion-level medical units.
- Division-level medical treatment facilities.
- Combat support hospitals.
- Evacuation hospitals.

NBC recon units (assisted by medical personnel).

- Medical-technical intelligence teams.

Designated sampling units receive additional training on packing and transporting samples. Only authorized and trained elements can collect biomedical samples.

Technical Intelligence Team

The technical intelligence team assigned to the Foreign Materiel Intelligence Battalion (FMIB) is a TAACOM asswt. The CBS technical intelligence team has an extremely limited ability to conduct CBS operations, and therefore, must be augmented by specialty teams. The specialty teams perform the following functions—

- Operate the XM2 bio-environmental sampler.
- Conduct biomedical sampling.
- Conduct witness interviews.

Special Operation Forces (LB Teams)

The LB team is assigned to the Special Operations Force (SOF) and may be available to the theater commander for CB sampling operations. The SOF may conduct special operations independently when conventional operations are inappropriate or not feasible. The LB team may be involved in special operations directly controlled by higher echelons. In most cases, this will require minimal involvement with the LB team's intermediate headquarters. LB team operations generally differ from conventional recon and other NBC recon units in operational techniques, mode of employment, distance from friendly support, dependence upon detailed operational intelligence, and indigenous assets.

The LB team conducts special NBC recon in denied, sensitive, or hostile territory. The LB team collects high quality samples, which are used as key input for critical decisions, such as verification of first use of toxic materiels by a threat force. See FM 3-18 for more information on LB team operations.

Staff Support

The theater chemical officer provides advice to the J2 on the proper use and employment of recon units qualified to conduct chemical and biological sampling operations. The theater chemical officer also provides information and recommends missions for the CB sampling units. The J2 generates the mission requirement and the theater chemical officer determines the best method for completing the requirement. The theater chemical officer uses the following considerations to determine which sampling assets are tasked:

- Intent of the intelligence requirement.
- Location of the sampling target.
- Effect of sampling on current operations.
- Effect of sampling on future operations.
- Support requirements.
- Security requirements.

If the theater chemical officer determines the best method for completing a requirement within a division's area of concern, he or she may recommend the employment of the TAACOM NBC recon unit. If the theater chemical officer needs advice or technical staff support for actions relating to the CB sampling requirement, he or she coordinates directly with the relevant staff element.

For example, if a CB sampling mission requirement involves biomedical sampling, coordination with the command surgeon is necessary. If the requirement for the CB sampling mission involves the interview of native witnesses or casualties, coordination with the J5 is necessary because it involves the civilian government.

After samples are taken, they are packaged and transported to the sample transfer point (which maybe the decontamination point). Appendix B provides detailed instructions on packaging samples. A qualified escort must accompany the suspected sample during the entire evacuation process to ensure safety and to maintain chain of custody. Technical escort is preferred during the entire evacuation process, but may not always be practical because of the limited number of technical escort units. The sample goes to the theater chemical and biological sample collection point.

If the sample is to go to CONUS for analysis, an additional technical escort is required to accompany the sample to CONUS from the port of debarkation to its final hand off to the receiving laboratory.

After the laboratory completes the analysis, the data is turned over to military intelligence channels for further analysis and dissemination. The Technical Intelligence Agency provides feedback to field commanders through the normal intelligence channels.